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FILE 'HOME' ENTERED AT 13:11:06 ON 10 JUN 2009

=> file biosis medline caplus wpids uspatfull
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*** YOU HAVE NEW MAIL ***

=> s ident? (5a) sequence and polynucleotide

<------User Break------>

SEARCH ENDED BY USER
   3 FILES SEARCHED...

=>  s ident? (5a) sequence (5a) polynucleotide
   3 FILES SEARCHED...
<------User Break------>

SEARCH ENDED BY USER
L1        2856 IDENT? (5A) SEQUENCE (5A) POLYNUCLEOTIDE

=>  s ident? (5a) sequence (5a) polynucleotide
   3 FILES SEARCHED...
L2       12758 IDENT? (5A) SEQUENCE (5A) POLYNUCLEOTIDE

=> s l2 and polymerase
L3        9708 L2 AND POLYMERASE

=> s l3 and time (7a) polymerase (7a) bind?
L4          34 L3 AND TIME (7A) POLYMERASE (7A) BIND?

=> dup rem l4
PROCESSING COMPLETED FOR L4
L5          34 DUP REM L4 (0 DUPLICATES REMOVED)

=> s l5 and 2003/py
L6           9 L5 AND 2003/PY

=> d l6 bib abs 1-9

L6   ANSWER 1 OF 9  USPATFULL on STN
AN     2003:336228  USPATFULL
```

TI Compositions isolated from forage grasses and methods for their use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
Shenk, Michael Andrew, Auckland, NEW ZEALAND
Glenn, Matthew, Auckland, NEW ZEALAND
Norriss, Michael Geoffrey, Christchurch, NEW ZEALAND
Saulsbury, Keith Martin, Christchurch, NEW ZEALAND
Hall, Claire, Auckland, NEW ZEALAND
Forster, Richard L.S., Auckland, NEW ZEALAND
PA GENESIS CORPORATION RESEARCH & DEVELOPMENT CORPORATION LIMITED, Auckland, NEW ZEALAND (non-U.S. corporation)
Wrightson Seeds Limited, Porirua, NEW ZEALAND (non-U.S. corporation)
PI US 20030237108 A1 20031225 <--
AI US 2003-431273 A1 20030506 (10)
PRAI US 2002-378930P 20020506 (60)
US 2002-408782P 20020905 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP, 1501 WESTERN AVE, SUITE 100, SEATTLE, WA, 98101
CLMN Number of Claims: 25
ECL Exemplary Claim: 1
DRWN 11 Drawing Page(s)
LN.CNT 6584
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides active in the fructan, cellulose, starch and/or tannin biosynthetic pathways are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 2 OF 9 USPATFULL on STN
AN 2003:325937 USPATFULL
TI Materials and methods for the modification of plant cell wall polysaccharides
IN Bloksberg, Leonard N., Remuera, NEW ZEALAND
PA GENESIS RESEARCH AND DEVELOPMENT CORPORATION LTD., Parnell, NEW ZEALAND (non-U.S. corporation)
RUBICON FORESTS HOLDINGS LIMITED (non-U.S. corporation)
PI US 20030229922 A1 20031211 <--
AI US 2003-393840 A1 20030320 (10)
RLI Continuation-in-part of Ser. No. US 2000-636800, filed on 10 Aug 2000, ABANDONED Continuation-in-part of Ser. No. US 1998-170862, filed on 13 Oct 1998, ABANDONED
PRAI US 1999-148426P 19990811 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP, 1501 WESTERN AVE, SUITE 100, SEATTLE, WA, 98101
CLMN Number of Claims: 21
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 1517
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides and polypeptides associated with the synthesis of plant cell wall polysaccharides are provided, together with genetic constructs comprising such sequences. Methods for using such constructs for the modulation of polysaccharide content in plants are also disclosed, together with transgenic plants comprising such constructs.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 3 OF 9 USPATFULL on STN
AN 2003:309170 USPATFULL
TI Pinus radiata nucleic acids encoding O-methyl transferase and methods for the modification of plant lignin content therewith
IN Bloksberg, Leonard N., Auckland, NEW ZEALAND
Havukkala, Ilkka, Auckland, NEW ZEALAND
PA Genesis Research & Development Corporation Limited, Parnell, NEW ZEALAND (non-U.S. corporation)
Rubicam Forests Industries Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 6653528 B1 20031125 <--
AI US 1998-169789 19981009 (9)
RLI Continuation-in-part of Ser. No. US 1997-975316, filed on 21 Nov 1997, now patented, Pat. No. US 5952486 Continuation-in-part of Ser. No. US 1996-713000, filed on 11 Sep 1996, now patented, Pat. No. US 5850020
DT Utility
FS GRANTED
EXNAM Primary Examiner: Nelson, Amy J.; Assistant Examiner: Baum, Stuart F.
LREP Sackman, Ann W., Sleath, Janet
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 2 Drawing Page(s)
LN.CNT 4291
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides associated with the lignin biosynthetic pathway are provided, together with constructs including such sequences. Methods for the modulation of lignin content, lignin structure and lignin composition in target organisms are also disclosed, the methods comprising incorporating one or more of the polynucleotides of the present invention into the genome of a target organism.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 4 OF 9 USPATFULL on STN
AN 2003:257700 USPATFULL
TI Compositions isolated from forage grasses and methods for their use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
Forster, Richard L., Auckland, NEW ZEALAND
Gibson, John Bryan, Canberra, AUSTRALIA
Shenk, Michael Andrew, Auckland, NEW ZEALAND
Norriss, Michael Geoffrey, Christchurch, NEW ZEALAND
Glenn, Matthew, Auckland, NEW ZEALAND
Saulsbury, Keith Martin, Christchurch, NEW ZEALAND
Hall, Claire, Auckland, NEW ZEALAND
PA GENESIS RESEARCH AND DEVELOPMENT CORP. LTD., Parnell, NEW ZEALAND (non-U.S. corporation)
PI US 20030180751 A1 20030925 <--
US 7154027 B2 20061226
AI US 2002-289757 A1 20021107 (10)
PRAI US 2001-337703P 20011107 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP, 1501 WESTERN AVE, SUITE 100, SEATTLE, WA, 98101
CLMN Number of Claims: 21
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 2884
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides active in lignin, fructan and tannin biosynthetic pathways are provided, together with expression

vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 5 OF 9 USPATFULL on STN
AN 2003:237907 USPATFULL
TI Compositions and methods for the therapy and diagnosis of colon cancer
IN King, Gordon E., Shoreline, WA, UNITED STATES
Meagher, Madeleine Joy, Seattle, WA, UNITED STATES
Xu, Jiangchun, Bellevue, WA, UNITED STATES
Secrist, Heather, Seattle, WA, UNITED STATES
Jiang, Yuqiu, Kent, WA, UNITED STATES
PA Corixa Corporation, Seattle, WA, UNITED STATES, 98104 (U.S. corporation)
PI US 20030166064 A1 20030904 <--
AI US 2002-99926 A1 20020314 (10)
RLI Continuation-in-part of Ser. No. US 2001-33528, filed on 26 Dec 2001, PENDING Continuation-in-part of Ser. No. US 2001-920300, filed on 31 Jul 2001, PENDING
PRAI US 2001-302051P 20010629 (60)
US 2001-279763P 20010328 (60)
US 2000-223283P 20000803 (60)
DT Utility
FS APPLICATION
LREP SEED INTELLECTUAL PROPERTY LAW GROUP PLLC, 701 FIFTH AVE, SUITE 6300, SEATTLE, WA, 98104-7092
CLMN Number of Claims: 17
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 8531
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Compositions and methods for the therapy and diagnosis of cancer, particularly colon cancer, are disclosed. Illustrative compositions comprise one or more colon tumor polypeptides, immunogenic portions thereof, polynucleotides that encode such polypeptides, antigen presenting cell that expresses such polypeptides, and T cells that are specific for cells expressing such polypeptides. The disclosed compositions are useful, for example, in the diagnosis, prevention and/or treatment of diseases, particularly colon cancer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 6 OF 9 USPATFULL on STN
AN 2003:189579 USPATFULL
TI Materials and methods for the modification of plant lignin content
IN Bloksberg, Leonard N., Auckland, NEW ZEALAND
Havukkala, Ilkka, Auckland, NEW ZEALAND
PI US 20030131373 A1 20030710 <--
US 7087426 B2 20060808
AI US 2002-174693 A1 20020618 (10)
RLI Continuation-in-part of Ser. No. US 2000-615192, filed on 12 Jul 2000, GRANTED, Pat. No. US 6410718 Continuation-in-part of Ser. No. US 1998-169789, filed on 9 Oct 1998, PENDING Continuation-in-part of Ser. No. US 1997-975316, filed on 21 Nov 1997, GRANTED, Pat. No. US 5952486 Continuation-in-part of Ser. No. US 1996-713000, filed on 11 Sep 1996, GRANTED, Pat. No. US 5850020
PRAI US 1999-143833P 19990714 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP, 1501 WESTERN AVE, SUITE 100, SEATTLE, WA, 98101
CLMN Number of Claims: 27

ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 9090
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides and polypeptides associated with the lignin biosynthetic pathway are provided, together with genetic constructs including such sequences. Methods for the modulation of lignin content, lignin structure and lignin composition in target organisms are also disclosed, the methods comprising incorporating one or more of the polynucleotides of the present invention into the genome of a target organism.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 7 OF 9 USPATFULL on STN
AN 2003:120243 USPATFULL
TI Compositions affecting programmed cell death and their use in the modification of plant development
IN Flinn, Barry, Fredericton, CANADA
Lasham, Annette, Auckland, NEW ZEALAND
PA Genesis Research and Development Corporation Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 20030082724 A1 20030501 <--
AI US 2002-219220 A1 20020814 (10)
RLI Continuation-in-part of Ser. No. US 1999-325932, filed on 4 Jun 1999, GRANTED, Pat. No. US 6451604
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP, 1501 WESTERN AVE, SUITE 100, SEATTLE, WA, 98101
CLMN Number of Claims: 24
ECL Exemplary Claim: 1
DRWN 18 Drawing Page(s)
LN.CNT 9341
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides associated with programmed cell death and various plant developmental mechanisms are provided, together with genetic constructs comprising such sequences. Methods for the modulation of the content, structure and metabolism of plants, and particularly for the modulation of PCD and various plant developmental mechanisms in plants, are also disclosed, the methods comprising incorporating one or more of the polynucleotides or genetic constructs of the present invention into the genome of a plant.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6 ANSWER 8 OF 9 USPATFULL on STN
AN 2003:106233 USPATFULL
TI Compositions and methods for the therapy and diagnosis of pancreatic cancer
IN Benson, Darin R., Seattle, WA, UNITED STATES
Kalos, Michael D., Seattle, WA, UNITED STATES
Lodes, Michael J., Seattle, WA, UNITED STATES
Persing, David H., Redmond, WA, UNITED STATES
Hepler, William T., Seattle, WA, UNITED STATES
Jiang, Yuqiu, Kent, WA, UNITED STATES
PA Corixa Corporation, Seattle, WA, UNITED STATES, 98104 (U.S. corporation)
PI US 20030073144 A1 20030417 <--
AI US 2002-60036 A1 20020130 (10)
PRAI US 2001-333626P 20011127 (60)
US 2001-305484P 20010712 (60)
US 2001-265305P 20010130 (60)

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       US 2001-267568P     20010209 (60)
       US 2001-313999P     20010820 (60)
       US 2001-291631P     20010516 (60)
       US 2001-287112P     20010428 (60)
       US 2001-278651P     20010321 (60)
       US 2001-265682P     20010131 (60)
DT     Utility
FS     APPLICATION
LREP   SEED INTELLECTUAL PROPERTY LAW GROUP PLLC, 701 FIFTH AVE, SUITE 6300,
       SEATTLE, WA, 98104-7092
CLMN   Number of Claims: 17
ECL    Exemplary Claim: 1
DRWN   No Drawings
LN.CNT 14253
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Compositions and methods for the therapy and diagnosis of cancer,
       particularly pancreatic cancer, are disclosed. Illustrative compositions
       comprise one or more pancreatic tumor polypeptides, immunogenic portions
       thereof, polynucleotides that encode such polypeptides, antigen
       presenting cell that expresses such polypeptides, and T cells that are
       specific for cells expressing such polypeptides. The disclosed
       compositions are useful, for example, in the diagnosis, prevention
       and/or treatment of diseases, particularly pancreatic cancer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L6   ANSWER 9 OF 9  USPATFULL on STN
AN     2003:66604  USPATFULL
TI     Compositions isolated from plant cells and their use in the modification
       of plant cell signaling
IN     Strabala, Timothy, Auckland, NEW ZEALAND
       Nieuwenhuizen, Nicolaas, Auckland, NEW ZEALAND
       Higgins, Colleen M., Auckland, NEW ZEALAND
PA     Genesis Research and Development Corporation Limited, Parnell, NEW
       ZEALAND (non-U.S. corporation)
PI     US 20030046728      A1  20030306                              <--
       US 6768041          B2  20040727
AI     US 2002-101464      A1  20020318 (10)
RLI    Continuation-in-part of Ser. No. US 2000-704302, filed on 1 Nov 2000,
       PENDING Continuation-in-part of Ser. No. US 1999-228986, filed on 12 Jan
       1999, GRANTED, Pat. No. US 6359198
PRAI   WO 2000-US724       20000111
       US 1999-162866P     19991101 (60)
DT     Utility
FS     APPLICATION
LREP   SPECHMAN LAW GROUP, 1501 WESTERN AVE, SUITE 100, SEATTLE, WA, 98101
CLMN   Number of Claims: 31
ECL    Exemplary Claim: 1
DRWN   28 Drawing Page(s)
LN.CNT 1411
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB     Novel isolated polynucleotides that encode polypeptides involved in
       plant cell signaling are provided, together with genetic constructs
       comprising such polynucleotides. Methods for using such constructs for
       the modulation of cell signaling in plants are also disclosed, together
       with transgenic plants comprising such constructs.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.


=> d l6 1 kwic
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L6 ANSWER 1 OF 9 USPATFULL on STN

DETD [0081] In a first aspect, the present invention provides isolated polynucleotide sequences identified in the attached Sequence Listing as SEQ ID NOS: 1-44, and polypeptide sequences identified in the attached Sequence Listing as SEQ ID NO: 45-88.. . .
DETD . . . or a portion of one of the sequences of SEQ ID NO: 1-44 or a variant thereof, when the extended polynucleotide comprises an identified sequence or its variant, or an identified contiguous portion (x-mer) of one of the sequences of SEQ ID NO: 1-44 or a variant thereof. Similarly, RNA sequences,. . .
DETD . . . identify positive clones in either cDNA or genomic DNA libraries from forage grass tissue cells by means of hybridization or polymerase chain reaction (PCR) techniques. Hybridization and PCR techniques suitable for use with such oligonucleotide probes are well known in the. . .
DETD [0111] As noted above, the percentage identity of a polynucleotide or polypeptide sequence is determined by aligning polynucleotide and polypeptide sequences using appropriate algorithms, such as BLASTN or BLASTP, respectively, set to default parameters; identifying the number of. . .
DETD . . . anti-sense orientation or a non-coding region, the gene promoter sequence consists only of a transcription initiation site having a RNA polymerase binding site.
DETD . . . anti-sense RNA only in the tissue of interest. With DNA constructs employing inducible gene promoter sequences, the rate of RNA polymerase binding and initiation can be modulated by external stimuli, such as light, heat, anaerobic stress, alteration in nutrient conditions and the like. Temporally regulated promoters can be employed to effect modulation of the rate of RNA polymerase binding and initiation at a specific time during development of a transformed cell. Preferably, the original promoters from the enzyme gene in question, or promoters from a. . .
DETD . . . Manual, Kluwer Academic Publishers: Dordrecht, 1988). The presence and integrity of the binary vector in A. tumefaciens was verified by polymerase chain reaction (PCR) using the forward primer provided in SEQ ID NO: 89 and reverse primer provided in SEQ ID:. . .

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(FILE 'HOME' ENTERED AT 13:11:06 ON 10 JUN 2009)

FILE 'BIOSIS, MEDLINE, CAPLUS, WPIDS, USPATFULL' ENTERED AT 13:11:44 ON 10 JUN 2009
L1 2856 S IDENT? (5A) SEQUENCE (5A) POLYNUCLEOTIDE
L2 12758 S IDENT? (5A) SEQUENCE (5A) POLYNUCLEOTIDE
L3 9708 S L2 AND POLYMERASE
L4 34 S L3 AND TIME (7A) POLYMERASE (7A) BIND?
L5 34 DUP REM L4 (0 DUPLICATES REMOVED)
L6 9 S L5 AND 2003/PY

=> s l5 not l6
L7 25 L5 NOT L6

=> d l7 bib abs 1-25

L7 ANSWER 1 OF 25 WPIDS COPYRIGHT 2009 THOMSON REUTERS on STN
AN 2005-123165 [13] WPIDS

DNC C2005-040939 [13]
TI Identifying the sequence or a mutation in a target polynucleotide, useful for identifying single nucleotide polymorphism, by measuring the time taken for a polymerase enzyme to bind and dissociate from the polynucleotide
DC B04; D16
IN DENSHAM D; DENSHAM D H; DENSHAM D H M
PA (MEDI-N) MEDICAL BIOSYSTEMS LTD; (DENS-I) DENSHAM D
CYC 107
PIA WO 2005010210 A2 20050203 (200513)* EN 19[1]
EP 1649051 A2 20060426 (200628) EN
MX 2006000962 A1 20060401 (200654) ES
BR 2004012813 A 20060926 (200665) PT
AU 2004259893 A1 20050203 (200667) EN
KR 2006052863 A 20060519 (200675) KO
JP 2006528485 W 20061221 (200703) JA 15
CN 1852991 A 20061025 (200715) ZH
EP 1649051 B1 20080305 (200819) EN
US 20080070236 A1 20080320 (200822) EN
DE 602004012273 E 20080417 (200829) DE
ES 2303083 T3 20080801 (200855) ES
DE 602004012273 T2 20090430 (200930) DE
ADT WO 2005010210 A2 WO 2004-GB3232 20040726; AU 2004259893 A1 AU 2004-259893 20040726; BR 2004012813 A BR 2004-12813 20040726; CN 1852991 A CN 2004-80026931 20040726; DE 602004012273 E DE 2004-602004012273 20040726; EP 1649051 A2 EP 2004-743561 20040726; EP 1649051 B1 EP 2004-743561 20040726; DE 602004012273 E EP 2004-743561 20040726; ES 2303083 T3 EP 2004-743561 20040726; EP 1649051 A2 WO 2004-GB3232 20040726; MX 2006000962 A1 WO 2004-GB3232 20040726; BR 2004012813 A WO 2004-GB3232 20040726; KR 2006052863 A WO 2004-GB3232 20040726; JP 2006528485 W WO 2004-GB3232 20040726; EP 1649051 B1 WO 2004-GB3232 20040726; US 20080070236 A1 WO 2004-GB3232 20040726; DE 602004012273 E WO 2004-GB3232 20040726; JP 2006528485 W JP 2006-520906 20040726; KR 2006052863 A KR 2006-701539 20060123; MX 2006000962 A1 MX 2006-962 20060124; US 20080070236 A1 US 2007-565750 20070228; DE 602004012273 T2 DE 2004-602004012273 20040726; DE 602004012273 T2 EP 2004-743561 20040726; DE 602004012273 T2 PCT Application WO 2004-GB3232 20040726
FDT DE 602004012273 E Based on EP 1649051 A; ES 2303083 T3 Based on EP 1649051 A; EP 1649051 A2 Based on WO 2005010210 A; MX 2006000962 A1 Based on WO 2005010210 A; BR 2004012813 A Based on WO 2005010210 A; AU 2004259893 A1 Based on WO 2005010210 A; KR 2006052863 A Based on WO 2005010210 A; JP 2006528485 W Based on WO 2005010210 A; EP 1649051 B1 Based on WO 2005010210 A; DE 602004012273 E Based on WO 2005010210 A; DE 602004012273 T2 Based on EP 1649051 A; DE 602004012273 T2 Based on WO 2005010210 A
PRAI GB 2003-17343 20030724
AN 2005-123165 [13] WPIDS
AB WO 2005010210 A2 UPAB: 20060121
NOVELTY - Identifying the sequence of or a mutation in a target polynucleotide by contacting the target polynucleotide with a polymerase enzyme and one of the nucleotides A, T (U), G and C and measuring the time taken for the polymerase to bind to and subsequently dissociate from the target polynucleotide to thus determine or identify whether the polymerase has incorporated the nucleotide onto the target polynucleotide or whether a mutation exists.

DETAILED DESCRIPTION - Identifying the sequence of or a mutation in a target polynucleotide comprises:

(a) contacting the target polynucleotide with a polymerase enzyme and one of the nucleotides A, T (U), G and C under conditions for the polymerase reaction to proceed;

(b) measuring the time taken for the polymerase to bind to and subsequently dissociate from the target polynucleotide, to thus determine or identify whether the polymerase has incorporated the nucleotide onto the target polynucleotide, and with reference to the native sequence of the target, determine whether a mutation exists;

(c) optionally repeating steps (a) and (b) with additional nucleotides, to thus identify the sequence of the target polynucleotide.

USE - The method is useful for identifying the complete target polynucleotide sequence or the sequence of a part of the polynucleotide. It is particularly useful for determining the presence of mutations within the target e.g. determining whether a substitution, deletion or addition has occurred compared to a control or reference sequence, specifically for identifying a single nucleotide polymorphism in a genetic sample and thus determine the identity of the nucleotide(s) at the putative site of mutation.

L7 ANSWER 2 OF 25 USPATFULL on STN
AN 2008:86990 USPATFULL
TI MODIFIED SURFACES FOR THE DETECTION OF BIOMOLECULES AT THE SINGLE MOLECULE LEVEL
IN Belosludtsev, Yuri, The Woodlands, TX, UNITED STATES
Battulga, Nasanshargal, Houston, TX, UNITED STATES
Reddy, Mistu, Pearland, TX, UNITED STATES
Kraltcheva, Anelia, Houston, TX, UNITED STATES
Hardin, Susan H., College Station, TX, UNITED STATES
Lincecum, Tommie L. JR., Houston, TX, UNITED STATES
Wang, Hongyi, Houston, TX, UNITED STATES
Deluge, Norha, Houston, TX, UNITED STATES
Nagaswamy, Uma, Houston, TX, UNITED STATES
Stevens, Benjamin C., Houston, TX, UNITED STATES
Kincaid, Kristi K., Houston, TX, UNITED STATES
PA VISIGEN BIOTECHNOLOGIES, INC., Houston, TX, UNITED STATES (U.S. corporation)
PI US 20080076189 A1 20080327
AI US 2007-694605 A1 20070330 (11)
PRAI US 2006-787434P 20060330 (60)
DT Utility
FS APPLICATION
LREP ROBERT W STROZIER, P.L.L.C, PO BOX 429, BELLAIRE, TX, 77402-0429, US
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 6 Drawing Page(s)
LN.CNT 1692
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Support surfaces are disclosed that are designed to support molecules or molecular assemblies immobilized thereon so that the molecules or molecular assemblies can be observed in single molecule detections systems, where the support surfaces have reduced background and the fluorescent labels associated with the immobilized molecules or molecular assemblies have longer active lifetimes prior to permanent photo-bleaching or deactivation and have improve fluorescence properties and where the surfaces have more uniform fluorescent properties.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 3 OF 25 USPATFULL on STN
AN 2008:80110 USPATFULL
TI Method for Sequencing Nucleic Acid Molecules
IN Densham, Daniel, Exeter, UNITED KINGDOM

PI US 20080070236 A1 20080320
AI US 2004-565750 A1 20040726 (10)
WO 2004-GB3232 20040726
20070228 PCT 371 date
PRAI GB 2003-17343 20030724
DT Utility
FS APPLICATION
LREP SALIWANCHIK LLOYD & SALIWANCHIK, A PROFESSIONAL ASSOCIATION, PO BOX 142950, GAINESVILLE, FL, 32614-2950, US
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN 2 Drawing Page(s)
LN.CNT 567
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The sequence of a target polynucleotide can be determined by: (i) contacting the target polynucleotide with a polymerase enzyme and one of the nucleotides A, T(U), G, and C under conditions suitable for the polymerase reaction to proceed; (ii) measuring the time taken for the polymerase to bind to and subsequently dissociate from the target polynucleotide, to thereby determine whether the polymerase has incorporated the nucleotide onto the target polynucleotide; (iii) optionally repeating steps (i) and (ii) with additional nucleotides, to thereby identify the sequence of the target polynucleotide.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 4 OF 25 USPATFULL on STN
AN 2008:12273 USPATFULL
TI Compositions Isolated From Forage Grasses and Methods for Their Use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
Shenk, Michael Andrew, Auckland, NEW ZEALAND
Glenn, Matthew, Auckland, NEW ZEALAND
Norriss, Michael Geoffrey, Christchurch, NEW ZEALAND
Saulsbury, Keith Martin, Christchurch, NEW ZEALAND
Hall, Claire, Auckland, NEW ZEALAND
Forster, Richard L.S., Auckland, NEW ZEALAND
PA WRIGHTSON SEEDS LIMITED, Porirua, NEW ZEALAND (non-U.S. corporation)
PI US 20080010701 A1 20080110
AI US 2007-756516 A1 20070531 (11)
RLI Continuation of Ser. No. US 2003-431273, filed on 6 May 2003, ABANDONED
PRAI US 2002-378930P 20020506 (60)
US 2002-408782P 20020905 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1201 THIRD AVENUE, SUITE 330, SEATTLE, WA, 98101, US
CLMN Number of Claims: 25
ECL Exemplary Claim: 1
DRWN 12 Drawing Page(s)
LN.CNT 2023
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides active in the fructan, cellulose, starch and/or tannin biosynthetic pathways are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 5 OF 25 USPATFULL on STN
AN 2007:233083 USPATFULL
TI Compositions Isolated From Forage Grasses and Methods for Their Use
IN Demmer, Jeroen, 33B Glenvar Road, Torbay, Auckland, NEW ZEALAND
Forster, Richard L., 263 Ostrich Road, Pukekohe, Auckland, NEW ZEALAND
Gibson, John Bryan, Canberra, AUSTRALIA
Shenk, Michael Andrew, 39 Cape Horn Road, Waikowhai, Auckland, NEW ZEALAND
Norriss, Michael Geoffrey, 16 Ilam Road, Riccarton, Christchurch, NEW ZEALAND
Glenn, Matthew, 14 Waimarie Road, Whenuapai, Auckland, NEW ZEALAND
Saulsbury, Keith Martin, 8 Samuel Street, Christchurch, NEW ZEALAND
Hall, Claire, 3/253 Kepa Road, Mission Bay, Auckland, NEW ZEALAND
PA WRIGHTSON SEEDS LIMITED, Porirua, NEW ZEALAND (non-U.S. corporation)
PI US 20070204363 A1 20070830
AI US 2006-560738 A1 20061116 (11)
RLI Continuation of Ser. No. US 2002-289757, filed on 7 Nov 2002, GRANTED, Pat. No. US 7154027
PRAI US 2001-337703P 20011107 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1201 THIRD AVENUE, SUITE 330, SEATTLE, WA, 98101, US
CLMN Number of Claims: 51
ECL Exemplary Claim: 1
DRWN 8 Drawing Page(s)
LN.CNT 2873
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides active in lignin, fructan and tannin biosynthetic pathways are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 6 OF 25 USPATFULL on STN
AN 2007:129942 USPATFULL
TI Antifreeze proteins isolated from forage grasses and methods for their use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
Fish, Steven Anthony, Auckland, NEW ZEALAND
Hall, Claire, Auckland, NEW ZEALAND
Shenk, Michael Andrew, San Francisco, CA, UNITED STATES
PA AgriGenesis Biosciences Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 20070113304 A1 20070517
AI US 2006-594324 A1 20061107 (11)
RLI Continuation-in-part of Ser. No. US 2003-657852, filed on 9 Sep 2003, GRANTED, Pat. No. US 7132263
PRAI US 2002-409557P 20020909 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1201 THIRD AVENUE, SUITE 330, SEATTLE, WA, 98101, US
CLMN Number of Claims: 30
ECL Exemplary Claim: 1
DRWN 11 Drawing Page(s)
LN.CNT 2882
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding antifreeze polypeptides are provided, together with expression vectors and host cells comprising such isolated

polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 7 OF 25 USPATFULL on STN
AN 2007:90822 USPATFULL
TI Control of floral induction
IN Lough, Tony James, Auckland, NEW ZEALAND
Hermsmeier, Dieter H., Minot, ND, UNITED STATES
Varkonyi-Gasic, Erika, Auckland, NEW ZEALAND
Sweetman, Justin, Auckland, NEW ZEALAND
Havukkala, Ilkka J., Auckland, NEW ZEALAND
Belanger, Helene, Auckland, NEW ZEALAND
Forster, Richard L.S., Auckland, NEW ZEALAND
Hudson, Keith R., Auckland, NEW ZEALAND
Lucas, William J., Davis, CA, UNITED STATES
PA AgriGenesis Biosciences Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
The Regents of the University of California, Oakland, CA, UNITED STATES (U.S. corporation)
PI US 20070079401 A1 20070405
AI US 2006-528043 A1 20060926 (11)
RLI Continuation-in-part of Ser. No. US 2005-138966, filed on 26 May 2005, PENDING Continuation-in-part of Ser. No. US 2004-931081, filed on 30 Aug 2004, GRANTED, Pat. No. US 7071380
PRAI US 2003-498940P 20030829 (60)
US 2003-509440P 20031007 (60)
US 2004-587881P 20040714 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1201 THIRD AVENUE, SUITE 330, SEATTLE, WA, 98101, US
CLMN Number of Claims: 21
ECL Exemplary Claim: 1
DRWN 60 Drawing Page(s)
LN.CNT 3466
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present application discloses plant polynucleotides, their encoded polypeptide sequences, and sRNA sequences which are putative regulators of long-distance florigenic signaling and flowering control. Methods of use of these sequences related to long-distance florigenic signaling are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 8 OF 25 USPATFULL on STN
AN 2006:215737 USPATFULL
TI Materials and methods for the modification of plant lignin content
IN Bloksberg, Leonard N., Auckland, NEW ZEALAND
Havukkala, Iikka, Auckland, NEW ZEALAND
PA Genesis Research & Development Corporation Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
Rubicon Forests Holdings Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 20060183895 A1 20060817
AI US 2006-397533 A1 20060403 (11)
RLI Continuation of Ser. No. US 2002-174693, filed on 18 Jun 2002, PENDING Continuation-in-part of Ser. No. US 2000-615192, filed on 12 Jul 2000, GRANTED, Pat. No. US 6410718 Continuation-in-part of Ser. No. US 1998-169789, filed on 9 Oct 1998, GRANTED, Pat. No. US 6653528

Continuation-in-part of Ser. No. US 1997-975316, filed on 21 Nov 1997, GRANTED, Pat. No. US 5952486 Continuation-in-part of Ser. No. US 1996-713000, filed on 11 Sep 1996, GRANTED, Pat. No. US 5850020
PRAI US 1999-143833P 19990714 (60)
DT Utility
FS APPLICATION
LREP FOLEY AND LARDNER LLP, SUITE 500, 3000 K STREET NW, WASHINGTON, DC, 20007, US
CLMN Number of Claims: 1
ECL Exemplary Claim: 1
DRWN 3 Drawing Page(s)
LN.CNT 2031
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides and polypeptides associated with the lignin biosynthetic pathway are provided, together with genetic constructs including such sequences. Methods for the modulation of lignin content, lignin structure and lignin composition in target organisms are also disclosed, the methods comprising incorporating one or more of the polynucleotides of the present invention into the genome of a target organism.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 9 OF 25 USPATFULL on STN
AN 2006:170013 USPATFULL
TI Control of floral induction
IN Lough, Tony James, Auckland, NEW ZEALAND
Hermsmeier, Dieter H., Doerentrup, GERMANY, FEDERAL REPUBLIC OF
Varkonyi-Gasic, Erika, Auckland, NEW ZEALAND
Sweetman, Justin, Auckland, NEW ZEALAND
Havukkala, Ilkka J., Auckland, NEW ZEALAND
Belanger, Helene, Auckland, NEW ZEALAND
Forster, Richard L. S., Auckland, NEW ZEALAND
Hudson, Keith R., Auckland, NEW ZEALAND
PA Agrigenesis Biosciences Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 7071380 B1 20060704
AI US 2004-931081 20040830 (10)
PRAI US 2004-587881P 20040714 (60)
US 2003-509440P 20031007 (60)
US 2003-498940P 20030829 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Mehta, Ashwin D.; Assistant Examiner: Worley, Cathy Kingdon
LREP Sleath, Janet, Speckman, Ann W., Speckman Law Group PLLC
CLMN Number of Claims: 8
ECL Exemplary Claim: 1
DRWN 153 Drawing Figure(s); 41 Drawing Page(s)
LN.CNT 2772
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present application discloses plant polynucleotides, their encoded polypeptide sequences, and sRNA sequences which are putative regulators of long-distance florigenic signaling and flowering control. Methods of using these sequences related to long-distance florigenic signalling, including modifying the occurrence, timing and extent of flower development by modulating the florigenic signaling pathway, are also disclosed.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 10 OF 25 USPATFULL on STN
AN 2006:161493 USPATFULL
TI Plant alpha farnesene synthase and polynucleotides encoding same
IN Green, Sol Alexander, Takapuna, NEW ZEALAND
    Friel, Ellen Nicola, Westren Springs, NEW ZEALAND
    Beuning, Lesley Leah, Huapai, NEW ZEALAND
    Macrae, Elspeth Ann, Mt. Albert, NEW ZEALAND
PI US 20060137032 A1 20060622
    US 7309817 B2 20071218
AI US 2003-531357 A1 20031015 (10)
    WO 2003-NZ229 20031015
                   20050922 PCT 371 date
PRAI NZ 2002-521984 20021015
DT Utility
FS APPLICATION
LREP GREENLEE WINNER AND SULLIVAN P C, 4875 PEARL EAST CIRCLE, SUITE 200, BOULDER, CO, 80301, US
CLMN Number of Claims: 40
ECL Exemplary Claim: 1
DRWN 21 Drawing Page(s)
LN.CNT 1881
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides an isolated alpha-farnesene synthase and polynucleotide sequences encoding the enzyme. The invention also provides nucleic acid constructs, vectors and host cells incorporating the polynucleotide sequences. It further relates to the production of alpha-farnesene using the enzyme and modulation of alpha-farnesene synthesis in plants and selection of plants with altered alpha-farnesene synthase activity.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 11 OF 25 USPATFULL on STN
AN 2005:305919 USPATFULL
TI Compositions isolated from forage grasses and methods for their use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
    Hall, Claire, Auckland, NEW ZEALAND
    Norriss, Michael Geoffrey, Christchurch, NEW ZEALAND
    Saulsbury, Keith Martin, Christchurch, NEW ZEALAND
PA AgriGenesis Biosciences Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
    Wrightson Seeds Limited, Porirua, NEW ZEALAND (non-U.S. corporation)
PI US 20050266558 A1 20051201
    US 7538260 B2 20090526
AI US 2005-110082 A1 20050419 (11)
RLI Continuation-in-part of Ser. No. US 2003-655799, filed on 5 Sep 2003, PENDING
PRAI US 2004-563723P 20040420 (60)
    US 2002-408782P 20020905 (60)
DT Utility
FS APPLICATION
LREP Janet Sleath, SPECKMAN LAW GROUP PLLC, Suite 100, 1501 Western Avenue, Seattle, WA, 98101, US
CLMN Number of Claims: 23
ECL Exemplary Claim: 1
DRWN 12 Drawing Page(s)
LN.CNT 3873
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides that regulate flowering are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such

polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 12 OF 25 USPATFULL on STN
AN 2005:305817 USPATFULL
TI Field-switch sequencing
IN Williams, John G.K., Lincoln, NE, UNITED STATES
Anderson, Jon P., Lincoln, NE, UNITED STATES
PA LI-COR, INC., Lincoln, NE, UNITED STATES (U.S. corporation)
PI US 20050266456 A1 20051201
US 7462452 B2 20081209
AI US 2005-118031 A1 20050429 (11)
PRAI US 2004-567202P 20040430 (60)
DT Utility
FS APPLICATION
LREP TOWNSEND AND TOWNSEND AND CREW, LLP, TWO EMBARCADERO CENTER, EIGHTH FLOOR, SAN FRANCISCO, CA, 94111-3834, US
CLMN Number of Claims: 55
ECL Exemplary Claim: 1
DRWN 15 Drawing Page(s)
LN.CNT 1680
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention provides novel compositions, methods and apparatus for DNA sequencing that can be performed, e.g., in a two-electrode chamber. The present invention also provides a method for sequencing a nucleic acid comprising immobilizing a plurality of complexes comprising a target nucleic acid, a primer nucleic acid, and a polymerase onto a surface, contacting the surface with a plurality of charged particles comprising a nucleotide phosphate by applying an electric field, reversing the electric field to transport unbound charged particles away from the surface, and detecting the incorporation of a nucleotide phosphate into a single molecule of the primer nucleic acid.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 13 OF 25 USPATFULL on STN
AN 2005:173257 USPATFULL
TI Compositions isolated from forage grasses and methods of use
IN Demmer, Jeroen, Torbay, NEW ZEALAND
Forster, Richard L., Pukekohe, NEW ZEALAND
Shenk, Michael Andrew, Hokowhitu, NEW ZEALAND
Norriss, Michael Geoffrey, Riccarton, NEW ZEALAND
Glenn, Matthew, Palmerston North, NEW ZEALAND
Saulsbury, Keith Martin, Christchurch, NEW ZEALAND
Hall, Claire, Mission Bay, NEW ZEALAND
PA AGRIGENESIS BIOSCIENCES LIMITED, Auckland, NEW ZEALAND (non-U.S. corporation)
WRIGHTSON SEEDS LIMITED, Porirua, NEW ZEALAND (non-U.S. corporation)
PI US 20050150008 A1 20050707
AI US 2004-955745 A1 20040930 (10)
RLI Continuation-in-part of Ser. No. US 2002-289757, filed on 7 Nov 2002, PENDING
PRAI US 2003-507991P 20031002 (60)
US 2004-563879P 20040420 (60)
US 2001-337703P 20011107 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1501 WESTERN AVE, SEATTLE, WA, 98101, US
CLMN Number of Claims: 21
ECL Exemplary Claim: 1

DRWN 9 Drawing Page(s)
LN.CNT 2919
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides active in lignin, fructan and tannin biosynthetic pathways are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 14 OF 25 USPATFULL on STN
AN 2005:167237 USPATFULL
TI Plant polypeptides and polynucleotides encoding same
IN Stanley, Duncan, Auckland, NEW ZEALAND
Macrae, Elspeth, Auckland, NEW ZEALAND
PI US 20050144667 A1 20050630
AI US 2003-490928 A1 20020930 (10)
WO 2002-NZ200 20020930
PRAI NZ 2001-514547 20010928
DT Utility
FS APPLICATION
LREP GREENLEE WINNER AND SULLIVAN P C, 4875 PEARL EAST CIRCLE, SUITE 200, BOULDER, CO, 80301, US
CLMN Number of Claims: 54
ECL Exemplary Claim: 1
DRWN 20 Drawing Page(s)
LN.CNT 3442
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB The present invention relates to isolated polypeptides having alpha-amylase activity and/or starch binding activity and/or plasmid targeting signals and to isolated polynucleotides encoding the polypeptides. The invention also relates to DNA constructs, vectors and host cells incorporating the polynucleotide sequences, methods for modulating starch content in plants, particularly plastids, as well as modifying plastid specific starch. The applicants have identified a class of alpha-amylases with plastid targeting signals and starch binding activity.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 15 OF 25 USPATFULL on STN
AN 2005:58662 USPATFULL
TI Compositions isolated from plant cells and their use in the modification of plant cell signaling
IN Strabala, Timothy, Auckland, NEW ZEALAND
Nieuwenhuizen, Nicolaas J., Auckland, NEW ZEALAND
Higgins, Colleen M., Auckland, NEW ZEALAND
PA AGRIGENESIS BIOSCIENCES LIMITED, Parnell, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 20050050583 A1 20050303
AI US 2004-864252 A1 20040609 (10)
RLI Continuation-in-part of Ser. No. US 2002-101464, filed on 18 Mar 2002, GRANTED, Pat. No. US 6768041 Continuation-in-part of Ser. No. US 2000-704302, filed on 1 Nov 2000, ABANDONED Continuation-in-part of Ser. No. US 1999-228986, filed on 12 Jan 1999, GRANTED, Pat. No. US 6359198
PRAI WO 2000-US724 20000111
US 1999-162866P 19991101 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1501 WESTERN AVE, SEATTLE, WA, 98101
CLMN Number of Claims: 32

ECL Exemplary Claim: 1
DRWN 28 Drawing Page(s)
LN.CNT 1630
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides that encode polypeptides involved in plant cell signaling are provided, together with genetic constructs comprising such polynucleotides. Methods for using such constructs for the modulation of cell signaling in plants are also disclosed, together with transgenic plants comprising such constructs.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 16 OF 25 USPATFULL on STN
AN 2005:51788 USPATFULL
TI Plant cell cycle genes and methods of use
IN Yao, Jia-Long, Blockhouse Bay, NEW ZEALAND
Ampomah-Dwamena, Charles, Owairaka, NEW ZEALAND
PA AGRIGENESIS BIOSCIENCES LIMITED, Parnell, NEW ZEALAND (non-U.S. corporation)
PI US 20050044591 A1 20050224
US 7371927 B2 20080513
AI US 2004-899942 A1 20040727 (10)
PRAI US 2003-490846P 20030728 (60)
US 2003-502573P 20030912 (60)
DT Utility
FS APPLICATION
LREP Susan J. Friedman, SPECKMAN LAW GROUP PLLC, Suite 100, 1501 Western Avenue, Seattle, WA, 98101
CLMN Number of Claims: 20
ECL Exemplary Claim: 1
DRWN 12 Drawing Page(s)
LN.CNT 4038
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB This application discloses plant polynucleotide sequences encoding polypeptide regulators of plant growth and reproduction, and their methods of use.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 17 OF 25 USPATFULL on STN
AN 2004:327325 USPATFULL
TI Compositions and methods for the modification of gene expression
IN Wood, Marion, Auckland, NEW ZEALAND
Shenk, Michael A., Palmerston North, NEW ZEALAND
McGrath, Annette, St. Lucia, AUSTRALIA
Glenn, Matthew, Palmerston North, NEW ZEALAND
PI US 20040259145 A1 20041223
AI US 2004-856499 A1 20040528 (10)
RLI Continuation-in-part of Ser. No. US 2000-640211, filed on 16 Aug 2000, PENDING Continuation-in-part of Ser. No. US 1999-266513, filed on 11 Mar 1999, ABANDONED
PRAI WO 2000-US6112 20000309
US 1999-149485P 19990818 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1501 WESTERN AVE, SEATTLE, WA, 98101
CLMN Number of Claims: 27
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 1842
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel isolated polynucleotides that encode plant transcription factors are provided, together with genetic constructs comprising such polynucleotides. Methods for using such constructs in modulating the expression of endogenous and/or heterologous genes are also disclosed, together with transgenic plants comprising such constructs.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 18 OF 25 USPATFULL on STN
AN 2004:323273 USPATFULL
TI Compositions and methods for the modification of gene transcription
IN Wood, Marion, Auckland, NEW ZEALAND
Shenk, Michael A., Auckland, NEW ZEALAND
McGrath, Annette, Auckland, NEW ZEALAND
Glenn, Matthew, Parnell, NEW ZEALAND
PA Agrigenesis Biosciences Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
Rubicon Forest Holdings Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 6833446 B1 20041221
AI US 2000-640211 20000816 (9)
RLI Continuation of Ser. No. WO 2000-US6112, filed on 9 Mar 2000
Continuation-in-part of Ser. No. US 1999-266513, filed on 11 Mar 1999, now abandoned
PRAI US 1999-149485P 19990818 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Whisenant, Ethan; Assistant Examiner: Tung, Joyce
LREP Speckman, Ann W., Sleath, Janet
CLMN Number of Claims: 14
ECL Exemplary Claim: 1
DRWN 0 Drawing Figure(s); 0 Drawing Page(s)
LN.CNT 1568
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides that encode plant transcription factors are provided, together with DNA constructs comprising such polynucleotides. Methods for using such constructs in modulating the expression of endogenous and/or heterologous genes are also disclosed, together with transgenic plants comprising such constructs.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 19 OF 25 USPATFULL on STN
AN 2004:190114 USPATFULL
TI Antifreeze proteins isolated from forage grasses and methods for their use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
Shenk, Michael Andrew, Hokowhitu, NEW ZEALAND
Hall, Claire, Auckland, NEW ZEALAND
Fish, Steven Anthony, Auckland, NEW ZEALAND
PA GENESIS CORPORATION RESEARCH & DEVELOPMENT CORPORATION LIMITED, Auckland, NEW ZEALAND (non-U.S. corporation)
Wrightson Seeds Limited, Porirua, NEW ZEALAND (non-U.S. corporation)
PI US 20040146884 A1 20040729
US 7132263 B2 20061107
AI US 2003-657852 A1 20030909 (10)
PRAI US 2002-409557P 20020909 (60)
DT Utility
FS APPLICATION
LREP SPECKMAN LAW GROUP PLLC, 1501 WESTERN AVE, SEATTLE, WA, 98101
CLMN Number of Claims: 35

ECL Exemplary Claim: 1
DRWN 5 Drawing Page(s)
LN.CNT 1935
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding antifreeze polypeptides are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 20 OF 25 USPATFULL on STN
AN 2004:165355 USPATFULL
TI Compositions isolated from forage grasses and methods for their use
IN Demmer, Jeroen, Auckland, NEW ZEALAND
Hall, Claire, Auckland, NEW ZEALAND
Norriss, Michael Geoffrey, Christchurch, NEW ZEALAND
Saulsbury, Keith Martin, Christchurch, NEW ZEALAND
PI US 20040126843 A1 20040701
US 7265278 B2 20070904
AI US 2003-655799 A1 20030905 (10)
PRAI US 2002-408782P 20020905 (60)
DT Utility
FS APPLICATION
LREP Janet Sleath, SPECKMAN LAW GROUP, Suite 100, 1501 Western Avenue, Seattle, WA, 98101
CLMN Number of Claims: 23
ECL Exemplary Claim: 1
DRWN 7 Drawing Page(s)
LN.CNT 3805
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Isolated polynucleotides encoding polypeptides that regulate flowering are provided, together with expression vectors and host cells comprising such isolated polynucleotides. Methods for the use of such polynucleotides and polypeptides are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 21 OF 25 USPATFULL on STN
AN 2002:272801 USPATFULL
TI Compositions and methods for the therapy and diagnosis of colon cancer
IN Stolk, John A., Bothell, WA, UNITED STATES
Xu, Jiangchun, Bellevue, WA, UNITED STATES
Chenault, Ruth A., Seattle, WA, UNITED STATES
Meagher, Madeleine Joy, Seattle, WA, UNITED STATES
PA Corixa Corporation, Seattle, WA, UNITED STATES, 98104 (U.S. corporation)
PI US 20020150922 A1 20021017
AI US 2001-998598 A1 20011116 (9)
PRAI US 2001-304037P 20010710 (60)
US 2001-279670P 20010328 (60)
US 2001-267011P 20010206 (60)
US 2000-252222P 20001120 (60)
DT Utility
FS APPLICATION
LREP SEED INTELLECTUAL PROPERTY LAW GROUP PLLC, 701 FIFTH AVE, SUITE 6300, SEATTLE, WA, 98104-7092
CLMN Number of Claims: 17
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 9233
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Compositions and methods for the therapy and diagnosis of cancer, particularly colon cancer, are disclosed. Illustrative compositions comprise one or more colon tumor polypeptides, immunogenic portions thereof, polynucleotides that encode such polypeptides, antigen presenting cell that expresses such polypeptides, and T cells that are specific for cells expressing such polypeptides. The disclosed compositions are useful, for example, in the diagnosis, prevention and/or treatment of diseases, particularly colon cancer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 22 OF 25 USPATFULL on STN
AN 2002:243051 USPATFULL
TI Compositions and methods for the therapy and diagnosis of ovarian cancer
IN Algate, Paul A., Issaquah, WA, UNITED STATES
Jones, Robert, Seattle, WA, UNITED STATES
Harlocker, Susan L., Seattle, WA, UNITED STATES
PA Corixa Corporation, Seattle, WA, UNITED STATES, 98104 (U.S. corporation)
PI US 20020132237 A1 20020919
AI US 2001-867701 A1 20010529 (9)
PRAI US 2000-207484P 20000526 (60)
DT Utility
FS APPLICATION
LREP SEED INTELLECTUAL PROPERTY LAW GROUP PLLC, 701 FIFTH AVE, SUITE 6300, SEATTLE, WA, 98104-7092
CLMN Number of Claims: 11
ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 25718
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Compositions and methods for the therapy and diagnosis of cancer, particularly ovarian cancer, are disclosed. Illustrative compositions comprise one or more ovarian tumor polypeptides, immunogenic portions thereof, polynucleotides that encode such polypeptides, antigen presenting cell that expresses such polypeptides, and T cells that are specific for cells expressing such polypeptides. The disclosed compositions are useful, for example, in the diagnosis, prevention and/or treatment of diseases, particularly ovarian cancer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 23 OF 25 USPATFULL on STN
AN 2002:242791 USPATFULL
TI Compositions and methods for the therapy and diagnosis of colon cancer
IN King, Gordon E., Shoreline, WA, UNITED STATES
Meagher, Madeleine Joy, Seattle, WA, UNITED STATES
Xu, Jiangchun, Bellevue, WA, UNITED STATES
Secrist, Heather, Seattle, WA, UNITED STATES
PA Corixa Corporation, Seattle, WA, UNITED STATES (U.S. corporation)
PI US 20020131971 A1 20020919
AI US 2001-33528 A1 20011226 (10)
RLI Continuation-in-part of Ser. No. US 2001-920300, filed on 31 Jul 2001, PENDING
PRAI US 2001-302051P 20010629 (60)
US 2001-279763P 20010328 (60)
US 2000-223283P 20000803 (60)
DT Utility
FS APPLICATION
LREP SEED INTELLECTUAL PROPERTY LAW GROUP PLLC, 701 FIFTH AVE, SUITE 6300, SEATTLE, WA, 98104-7092
CLMN Number of Claims: 17

ECL Exemplary Claim: 1
DRWN No Drawings
LN.CNT 8083
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Compositions and methods for the therapy and diagnosis of cancer, particularly colon cancer, are disclosed. Illustrative compositions comprise one or more colon tumor polypeptides, immunogenic portions thereof, polynucleotides that encode such polypeptides, antigen presenting cell that expresses such polypeptides, and T cells that are specific for cells expressing such polypeptides. The disclosed compositions are useful, for example, in the diagnosis, prevention and/or treatment of diseases, particularly colon cancer.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 24 OF 25 USPATFULL on STN
AN 2002:238880 USPATFULL
TI Compositions affecting programmed cell death and their use in the modification of forestry plant development
IN Flinn, Barry, Auckland, NEW ZEALAND
Lasham, Annette, Auckland, NEW ZEALAND
PA Genesis Research & Development Corporation Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
Fletcher Challenge Forests Limited, Auckland, NEW ZEALAND (non-U.S. corporation)
PI US 6451604 B1 20020917
AI US 1999-325932 19990604 (9)
DT Utility
FS GRANTED
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CLMN Number of Claims: 19
ECL Exemplary Claim: 1
DRWN 4 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 6085
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides associated with programmed cell death and various plant developmental mechanisms are provided, together with genetic constructs comprising such sequences. Methods for the modulation of the content, structure and metabolism of forestry plants, and particularly for the modulation of PCD and various plant developmental mechanisms in forestry plants, are also disclosed, the methods comprising incorporating one or more of the polynucleotides or genetic constructs of the present invention into the genome of a forestry plant.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

L7 ANSWER 25 OF 25 USPATFULL on STN
AN 2002:152785 USPATFULL
TI Materials and methods for the modification of plant lignin content
IN Bloksberg, Leonard N., Remuera, NEW ZEALAND
Havukkala, Ilkka, Remuera, NEW ZEALAND
PA Genesis Research & Development Corporation Ltd., NEW ZEALAND (non-U.S. corporation)
Fletcher Challenge Forests Ltd., NEW ZEALAND (non-U.S. corporation)
PI US 6410718 B1 20020625
AI US 2000-615192 20000712 (9)
RLI Continuation-in-part of Ser. No. US 1998-169789, filed on 9 Oct 1998 Continuation-in-part of Ser. No. US 1997-975316, filed on 21 Nov 1997, now patented, Pat. No. US 5952486 Continuation-in-part of Ser. No. US 1996-713000, filed on 11 Sep 1996, now patented, Pat. No. US 5850020

PRAI US 1999-143811P 19990714 (60)
DT Utility
FS GRANTED
EXNAM Primary Examiner: Yucel, Remy; Assistant Examiner: Katcheres, Konstantina
LREP Speckman, Ann W., Sleath, Janet
CLMN Number of Claims: 6
ECL Exemplary Claim: 1
DRWN 5 Drawing Figure(s); 3 Drawing Page(s)
LN.CNT 2192
CAS INDEXING IS AVAILABLE FOR THIS PATENT.
AB Novel isolated polynucleotides and polypeptides associated with the lignin biosynthetic pathway are provided, together with constructs including such sequences. Methods for the modulation of lignin content, lignin structure and lignin composition in target organisms are also disclosed, the methods comprising incorporating one or more of the polynucleotides of the present invention into the genome of a target organism.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

=> d l7 8 kwic

L7 ANSWER 8 OF 25 USPATFULL on STN
DETD In a first aspect, the present invention provides isolated polynucleotide sequences identified in the attached Sequence Listing as SEQ ID NO: 1-266, 350-375, 404 and 406, variants of those sequences, extended sequences comprising the sequences set. . .
DETD . . . one of the sequences of SEQ ID NO: 1-266, 350-375, 404 and 406, or a variant thereof, when the extended polynucleotide comprises an identified sequence or its variant, or an identified contiguous portion (x-mer) of one of the sequences of SEQ ID NO: 1-266, 350-375, 404 and 406, or a variant. . .
DETD . . . nucleotides, and comprehends both probes for use in hybridization assays and primers for use in the amplification of DNA by polymerase chain reaction.
DETD . . . present invention may comprise one or more probes or primers corresponding to a polynucleotide of the present invention, including a polynucleotide sequence identified in SEQ ID NO: 1-266, 350-375, 404 and 406.
DETD . . . antisense orientation or a non-coding region, the gene promoter sequence consists only of a transcription initiation site having a RNA polymerase binding site.
DETD . . . antisense RNA only in the tissue of interest. With genetic constructs employing inducible gene promoter sequences, the rate of RNA polymerase binding and initiation can be modulated by external stimuli, such as light, heat, anaerobic stress, alteration in nutrient conditions and the like. Temporally regulated promoters can be employed to effect modulation of the rate of RNA polymerase binding and initiation at a specific time during development of a transformed cell. Preferably, the original promoters from the enzyme gene in question, or promoters from a. . .
DETD . . . 4 μM LNB011, 1+ Kogen's buffer, 0.1 mg/ml BSA, 200 mM dNTP, 2 mM Mg.sup.2+, and 0.1 U/μl of Taq polymerase (Gibco BRL). Conditions were 2 cycles of 2 min at 94° C., 1 min at 55° C. and 1 min. . .

=> d l7 17 kwic

L7 ANSWER 17 OF 25 USPATFULL on STN

SUMM . . . regions are sequences of DNA, termed promoters, which are located close to the transcription initiation site and to which RNA polymerase is first bound, either directly or indirectly. Promoters usually consist of proximal (e.g., TATA box) and more distant elements (e.g.,. . .

SUMM . . . been proposed that this net negative region of the transcription factor interacts with the TATA box-binding transcription factor TFIID, RNA polymerase, and/or another protein associated with the transcription apparatus.

SUMM . . . of one of the sequences of SEQ ID NOS: 1-591, 1183-1912 and 1931-2106, or a variant thereof, when the extended polynucleotide comprises an identified sequence or its variant, or an identified contiguous portion (x-mer) of one of the sequences of SEQ ID NOS: 1-591, 1183-1912 and 1931-2106, or a variant thereof.. . .

SUMM . . . orientation or an untranslated region, the gene promoter sequence may consist only of a transcription initiation site having a RNA polymerase binding site.

SUMM . . . antisense RNA only in the tissue of interest. With genetic constructs employing inducible gene promoter sequences, the rate of RNA polymerase binding and initiation can be modulated by external stimuli, such as light, heat, anaerobic stress, alteration in nutrient conditions and the like. Temporally regulated promoters can be employed to effect modulation of the rate of RNA polymerase binding and initiation at a specific time during development of a transformed cell. Preferably, the original promoters from the enzyme gene in question, or promoters from a. . .

SUMM . . . nucleotides, and comprehends both probes for use in hybridization assays and primers for use in the amplification of DNA by polymerase chain reaction. An oligonucleotide probe or primer is described as "corresponding to" a polynucleotide of the present invention, including one. . .

SUMM . . . present invention may comprise one or more probes or primers corresponding to a polynucleotide of the present invention, including a polynucleotide sequence identified in SEQ ID NOS: 1-591, 1183-1912 and 1931-2106.

DETD [0101] The adjacent putative DNA binding domains were amplified as a single fragment by polymerase chain reaction (PCR) (Forward primer 5' CGTCTGTCTAGAAACAAGCTGAACATGGACAAGAAGC 3' (SEQ ID NO: 2369) and Reverse primer 5' TGGCCTTCTAGACTAGCTCTGACCAGAGAAA 3' (SEQ ID. . .

=> d l7 12 kwic

L7 ANSWER 12 OF 25 USPATFULL on STN

AB . . . a nucleic acid comprising immobilizing a plurality of complexes comprising a target nucleic acid, a primer nucleic acid, and a polymerase onto a surface, contacting the surface with a plurality of charged particles comprising a nucleotide phosphate by applying an electric. . .

SUMM . . . the mid-1980's with enhancements in the areas of separating technologies (both in hardware formats & electrophoresis media), fluorescence dye chemistry, polymerase engineering, and applications software. The emphasis on sequencing the human genome with a greatly accelerated timetable along with the introduction. . .

SUMM . . . comprising:

(a) immobilizing a plurality of complexes comprising a target nucleic acid, a primer nucleic acid, and a polymerase onto a surface;

(b) contacting the surface with a plurality of charged particles comprising a nucleotide phosphate by applying. . .

DRWD . . . sequencing method of the present invention. Panel A illustrates the accumulation of negatively-charged particles (white and black circles) above immobilized polymerase-DNA complexes on a positively-charged indium-tin oxide (ITO) electrode (bottom rectangle). Particles bound by polymerases are shown (black circles). Panel B. . . field is reversed. The ITO electrode surface is illuminated by total internal reflection (arrows) and the particles retained by the polymerase-DNA complexes are imaged without interference from unbound particles which have moved away from the surface

DRWD FIG. 5 A-B Panel A shows a diagram of a circular template that is permanently associated with the anchored polymerase, while still being able to slide through the DNA binding groove to permit primer extension. The tunnel formed by polymerase immobilization is roughly the same dimension as a DNA sliding clamp. Panel B shows the structure of a polymerase. The template strand feeds into the DNA binding cleft between the biotin loops, trapping it between the enzyme and the immobilization surface. The primer strand, which is extended at its 3'-end by polymerization of dNTPs, exits the polymerase with the template strand as shown.

DETD The phrase "target nucleic acid" refers to a nucleic acid or polynucleotide whose sequence identity or ordering or location of nucleosides is to be determined using the methods described herein.

DETD Advantageously, the particles of the present invention are used to carry or transport the substrate nucleotide phosphates (NPs) to a polymerase (e.g., immobilized polymerase). Each particle has at least one NP, preferably at least two NPs and more preferably a plurality of NPs associated. . .

DETD . . . catalytic event can be detected by one or more cleavage molecules, or while the nucleotide phosphate is resident with the polymerase. In a preferred embodiment, the methods described herein detect the "residence time," or a "resident event" of a nucleotide phosphate on a polymerase, such as within the active site. In certain instances, polymerase catalyzed nucleotide incorporation is synchronized with the application of an electric field. Preferably, detection is carried out by a mechanism. . .

DETD . . . signature. In yet other embodiments, additional binding moieties are attached to the particles in order to enhance binding between the polymerase and the particle.

DETD . . . for each msec of exposure to the excitation laser beam (2.7 W/cm.sup.2). Particles are preferably illuminated while trapped by a polymerase, and detected.

DETD . . . comprising:

(a) immobilizing a plurality of complexes comprising a target nucleic acid, a primer nucleic acid, and a polymerase onto a surface;

(b) contacting the surface with a plurality of charged particles comprising a nucleotide phosphate by applying. . .

DETD . . . with electrically-conductive, optically-transparent indium-tin oxide (ITO). In one aspect, about 2 to 1000, preferably 50 to 700, more preferably 200-300 polymerase-DNA complexes are immobilized in the field of view at random positions on the bottom of a well, such that the. . .

DETD . . . an alternating electric field (E-field). First, charged particles (e.g., anions) are concentrated at the bottom electrode to blanket the immobilized polymerase-DNA complexes. This allows polymerases to bind the correct nucleotides for incorporation into DNA. Next, the E-field is reversed to transport. . .

DETD . . . present invention. With reference to panel A, it is shown that negatively-charged particles (white and black circles) accumulate above immobilized polymerase-DNA complexes on a positively-charged indium-tin oxide (ITO) electrode (bottom rectangle). Particles bound by polymerases are shown (black circles). After the. . . away from the electrode. The electrode surface is illuminated by total internal reflection (arrows) and the particles retained by the polymerase -DNA complexes are imaged without interference from unbound particles which have moved away from the surface. Each particle comprises at least. . .

DETD . . . the E-field is reversed. In other instances, the detecting comprises detecting the nucleotide phosphate (e.g., dNTP) while associated with the polymerase.

DETD . . . polymerases. High nucleotide surface density, flexible tethered nucleotides, and high particle concentrations at the electrode all have positive effects on polymerase binding kinetics.

DETD . . . in about 33 min. In addition, net throughput is significantly enhanced by multiplexing. For example, with an average of one polymerase-DNA complex per 50 μm.sup.2 area, there are about 200 optically-resolved complexes in the optical field (100+100 μm) on the imaged. . .

DETD A. Topologically Linked Polymerase-DNA Complexes.

DETD In a preferred embodiment, the polymerase-DNA complexes are taught and described in U.S. Patent Publication No. 2005/0042633, published Feb. 24, 2005, and incorporated herein by reference. As described therein, a polymerase-nucleic acid complex (PNAC), comprises: a target nucleic acid and a nucleic acid polymerase , wherein the polymerase has an attachment complex comprising at least one anchor, which at least one anchor irreversibly associates the target nucleic acid with the polymerase to increase the processivity index. As used herein, the term "processivity index" means the number of nucleotides incorporated before the polymerase dissociates from the DNA. Processivity refers to the ability of the enzyme to catalyze many different reactions without releasing its substrate. That is, the number of phosphodiester bonds formed is greatly increased as the substrate is associated with polymerase via an anchor.

DETD In a preferred embodiment, the polymerase is attached to the ITO permeation layer and stably associated with a DNA template to achieve long sequence reads. The polymerase can be attached to the ITO permeation layer via various linkages including, but not limited to, covalent, ionic, hydrogen bonding,. . . is a strong non-covalent interaction (e.g. avidin-biotin) or is covalent. In order to permanently associate the DNA template and the polymerase to the ITO permeation layer, an approach that functionally mimics the sliding clamp of a replisome, as described in Shamoo et al., Cell, 99:155 (1999), can be used. As shown in FIG. 5, the polymerase-DNA complex is attached to the ITO permeation layer through two biotin modifications on the polymerase binding to streptavidin covalently linked to the permeation layer. This topology irreversibly captures the DNA while still allowing it to slide through the polymerase active site. Circular in form, the DNA (.about.20 kb) is topologically linked to the immobilized polymerase, and therefore does not dissociate.

DETD In certain instances, the methods of the present invention employ a DNA polymerase such as DNA polymerase I, II, or III. In certain other instances, suitable polymerases include, but are not limited to, a DNA-dependent RNA polymerase and reverse transcriptase such as an HIV reverse transcriptase. Specific examples include, but are not limited to, T7 DNA polymerase, +29 DNA polymerase, T5 DNA polymerase, E. Coli DNA polymerase I, T4 DNA polymerase, T7 RNA

polymerase, Taq DNA polymerase, Vent DNA polymerase and Therminator polymerase. Those of skill in the art will know of other enzymes or polymerases suitable for use in the present invention.

DETD . . . basis of sequence similarities. Members of family A, which includes bacterial and bacteriophage polymerases, share significant similarity to E. coli polymerase I; hence family A is also known as the pol I family. The bacterial polymerases also contain an exonuclease activity,. . . portion. Family A polymerases include for example, Klenow, Taq, and T7 polymerases. Family B polymerases include for example, the Therminator polymerase, phi29, RB-69 and T4 polymerases.

DETD In other embodiments, the polymerases include T7 DNA polymerase , T5 DNA polymerase, HIV reverse transcriptase, E. coli DNA pol I, T4 DNA polymerase, T7 RNA polymerase, Taq DNA polymerase and E. coli RNA polymerase. In certain instances, exonuclease-defective versions of these polymerases are preferred. The efficiency with which γ-labeled NTPs are incorporated may vary between polymerases; HIV-1 RT and E. coli RNA polymerase reportedly readily incorporate γ-labeled nucleotide. The polymerase can also be a T7 polymerase . T7 polymerase has a known 3D structure and is known to be processive. In order to operate in a strand-displacement mode, the polymerase requires a complex of three proteins: T7 polymerase+thioredoxin+primase (Chowdhury et al. PNAS 97:12469). In other embodiments, the polymerases can also be HIV RT and DNA Polymerase I.

DETD For Therminator polymerase, protein regions on either side of the DNA binding cleft likely to be conformationally rigid were identified based upon previous studies with RB69 polymerase. Loops of ten amino acids containing a 6+His sequence at five candidate positions were inserted. Loops inserted at positions K53 and K229 had no deleterious effect on polymerase activity when present either individually or combined.

DETD . . . covalent coupling methods include, without limitation, a maleimide or thiol-activated permeation layer coupled to specific cysteine amino acids on the polymerase surface, a carboxylate permeation layer coupled to specific lysine amino acids on the polymerase surface, a hydrazine permeation layer coupled to the unnatural amino acid p-acetyl-L-phenylalanine on the polymerase surface, and the like. The latter is particularly useful because of its high coupling specificity, and long reactant shelf life. Given a suitable coupling chemistry, complexes are formed by mixing the polymerase with primed circular DNA and driving them electrically to the electrode surface for covalent coupling. To ensure that most anchored. . . exceeding the binding constant. Polymerases anchored without DNA are neglected because they have no sequencing activity. In certain aspects, when polymerase attachment is complete, the electric field is reversed to elute linear (e.g., broken) DNA templates, such that the only anchored. . . sequence data are those complexed with circular DNA templates. As shown in FIG. 6A, a simple computer model indicates that polymerase-DNA complexes (e.g., 200-300) can be dispersed randomly in a field (e.g. a 100 μm) of view at optically resolvable distances. In certain preferred aspects, polymerase-DNA complexes being optically resolvable is an important feature of the present invention. The number of resolvable complexes decreases at higher. . . a surface (e.g., ITO) provides an easy way to isolate single molecules for multiplexed, long-read sequence analysis. In some aspects, polymerase-DNA complexes can be attached in random orientation to the electrode by either covalent or non-covalent interactions; polymerases attached in active. . .

DETD . . . to a small amount of diffusive broadening in transit, particles accumulate at the ITO over a period of .about.0.1 msec. Time-critical steps immediately follow, with initiation of polymerase binding marking the start of a new cycle: t.sub.o=0.0 msec (step #2). At t=0.3 msec, the electric field is reversed to. . . 1 pN Particle Force.

Step	Start (msec)	Finish (msec)	Particle Position	Image
1	-2.4	0	Transit to ITO	
2	0.0	0.3	Polymerase binding at ITO surface	
3	0.3	0.6	Transit to top	
4	0.6	2.7	Transit to top	Acquire 2.1 msec
5	2.7	2.8	Collect. . .	

DETD . . . that are each 20 kilobases in length (i.e. 200+20,000=4,000,000). Therefore, the probability that an individual particle will be captured by polymerase and imaged is only about 4/7. Since each particle would carry nearly 300 linked NTPs, there is clearly a plentiful. . .

DETD . . . surfaces are separated by about 5 to 10 microns. In certain aspects, the field-switch cycle operates within the constraints of polymerase kinetics, with the duration of the catalytic step being from about 1-100 msec. Suitable working surfaces for the top electrode. . .

DETD In one embodiment, an electrode permeation layer protects the polymerase, DNA, and particles from electrochemical reactions at the electrode surface, while allowing access to ions and water. In another embodiment,. . .

DETD . . . dNTP, 1+ final concentration of phi29 reaction buffer (New England Biolabs), 100 μg/ml BSA, and 5 units of phi29 DNA polymerase were incubated in a 25 uL volume for 3 hours at 30° C. The amplified product consists of repeating units. . .

DETD . . . force constraints related to (1) stretching of the DNA template and to (2) the strength of nucleotide binding to the polymerase have been identified.

DETD . . . et al., Nature, 404:103 (2000); Forde et al., PNAS, 99:11682 (2002); Goel et al., PNAS, 98:8485 (2001)). For T7 DNA polymerase, as the DNA stretching force increases from 0 to 35 pN, polymerase activity initially increases slightly as the force ramps up to .about.5 pN, but then decreases back to the initial rate. . . an upper stretch force limit of 10 pN was set based on the observation that forces above this level inhibit polymerase activity. For a 20 kb DNA template (q=-40,000), the 10 pN limit would occur at a relatively low field strength. . .

DETD The second force constraint is related to the physical strength of the bond between a nucleotide triphosphate and a polymerase. The electric force on the nucleotide must not be so great as to pull the nucleotide from the polymerase before the catalytic reaction is completed. For example, T7 DNA polymerase in a closed conformation displays a strong interaction with a nucleotide, whereby the ribose and triphosphate moieties of the nucleotide. . . (2001)). The catalytic reaction occurs in the closed conformation, in which the nucleotide is tightly bound. After nucleotide incorporation, the polymerase changes to an open conformation from which pyrophosphate is released.

DETD The L-selectin example is similar to polymerase-nucleotide binding in the sense that both involve metal ion coordination and both have a like multiplicity of weaker electrostatic and. . .

DETD . . . on a 55 nm particle equate to 1.8 mM, which is sufficient to

support fast nucleotide binding based on DNA polymerase binding kinetics in free solution (i.e., K.sub.m<0.1 mM).

DETD . . . high nucleotide surface density, flexible tethered nucleotides, and high particle concentrations at the electrode can all have positive effects on polymerase binding kinetics, the lower diffusivity of particles compared to free nucleotides can have a negative effect. However, every polymerase does not have to bind a nucleotide every cycle. Missed binding events can be remedied in subsequent cycles, with the. . .

DETD . . . present invention is to increase throughput 200-300 fold over what a point detector could deliver by imaging many single, immobilized polymerase-DNA complexes simultaneously with a camera.

CLM What is claimed is:

. . . said method comprising: (a) immobilizing a plurality of complexes comprising a target nucleic acid, a primer nucleic acid, and a polymerase onto a surface; (b) contacting said surface with a plurality of charged particles comprising a nucleotide phosphate (NP) by applying. . .

CLM What is claimed is:

43. The method according to claim 29, wherein the detecting comprises detecting said nucleotide phosphate while associated with the polymerase.

CLM What is claimed is:

46. The method according to claim 29, wherein polymerase catalyzed nucleotide incorporation is synchronized with the application of said electric field.

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